

CLAIMS

What is claimed is:

1. A bedding for a utility line comprising:
an elongate trench formed in the earth;
5 a filter fabric wrap lining a lengthwise segment of the trench having a select length;
a first select depth of porous particulate material resting on a trench bottom
underlying a utility line and supporting the utility line in the lengthwise segment; and
a second select depth of porous particulate material overlying the utility pipe in the
lengthwise segment;
10 the select length of the lengthwise segment, the first select depth and the second
select depth being selected to store a select volume of water.
2. The bedding of claim 1 wherein a select portion of the porous particulate
material supporting the utility pipe lies within a water table underlying the utility pipe.
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3. The bedding of claim 1 further comprising at least one drainage well in
liquid communication between a water table underlying the trench and a bottom of the
lengthwise segment of the trench.
- 20 4. The bedding of claim 1 further comprising a conduit providing liquid
communication between a source of water and the lengthwise segment of the trench.
5. The bedding of claim 4 further comprising a perforated pipe overlying the
utility line in the lengthwise segment, the perforated pipe being in fluid communication
25 with the conduit.
6. The bedding of claim 4 wherein the source of water is a bioretention
facility comprising an engineered planting medium overlying a water collection structure,
the surface of the engineered planting medium supporting growing plants and the

collection structure being in liquid communication with the conduit.

7. The bedding of claim 6 wherein the water collection structure comprises a perforated pipe within a porous particulate material bed, the perforated pipe being in liquid
5 communication with the conduit.

8. The bedding of claim 7 wherein the porous particulate material bed is wrapped in a filter fabric.

10 9. The bedding of claim 1 wherein the porous particulate material is gravel.

10. The bedding of claim 1 wherein the second select depth is equal to zero inches.

11. A surface water retention and dissipation structure comprising:
a catch basin configured to collect surface water run-off;
an elongate trench formed in the earth;
a filter fabric wrap lining a lengthwise segment of the trench having a select length;
5 a first select depth of porous particulate material resting on a trench bottom
underlying a utility line in the lengthwise segment;
a second select depth of porous particulate material overlying the utility line in the
lengthwise segment; and
a conduit in liquid communication between the catch basin and the lengthwise
10 segment;
the select length of the lengthwise segment, the first select depth and the second
select depth being selected to store a select volume of water.

12. The surface water retention and dissipation structure of claim 11 further
15 comprising a perforated pipe overlying the utility line in the lengthwise segment, the
perforated pipe being in liquid communication with the conduit.

13. The surface water retention and dissipation structure of claim 11 wherein
the first select depth is sufficient to communicate the bottom of the trench with a water
20 table underlying the trench.

14. The surface water retention and dissipation structure of claim 11 further
comprising at least one drainage well in liquid communication between a water table
underlying the trench and the bottom of the trench.

25 15. The surface water retention and dissipation structure of claim 11 further
comprising a bioretention facility comprising an engineered planting medium overlying a
water collection structure, the surface of the engineered planting medium supporting
growing plants and the collection structure being in liquid communication with the

conduit.

16. The surface water retention and dissipation structure of claim 15 wherein
the water collection structure comprises a perforated pipe within a porous particulate
5 material bed, the perforated pipe being in liquid communication with the conduit.

17. The surface water retention and dissipation structure of claim 11 wherein
the second select depth is zero inches.

18. A method of constructing a utility line bedding for water management comprising:

- determining a select volume of water to be dissipated;
- excavating a utility line trench of width sized to receive a utility line of a given diameter therein and excavating a lengthwise segment of the trench to a select segment length and select segment depth;
- lining the lengthwise segment with a filter fabric wrap;
- providing a base of porous particulate material having a first select depth on a bottom of the trench in the lengthwise segment of the trench;
- laying the utility line on the base;
- providing a cover of porous particulate material having a second select depth over the utility line;
- selecting the first select depth, the second select depth and the select length of the lengthwise segment of the trench to provide a sufficient volume of porous particulate material to hold the select volume of water to be dissipated.

19. The method of claim 18 wherein the water to be dissipated is storm water run-off and the select volume of storm water run-off to be dissipated is determined based upon a projected storm event.

20. The method of claim 18 further comprising providing liquid communication between the bottom of the lengthwise segment and a water table underlying the utility line trench.

21. The method of claim 20 wherein the liquid communication is provided by excavating the lengthwise segment to a depth sufficient for the trench bottom to lie below the surface of the water table.

22. The method of claim 18 further comprising providing a perforated pipe in

the cover of porous particulate material over the utility line in the lengthwise segment.

23. The method of claim 22 further comprising providing a source of the storm water run off to be dissipated in liquid communication with the perforated pipe.

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24. The method of claim 18 further comprising providing a conduit in liquid communication between a source of the storm water run off to be dissipated and the lengthwise segment.

25. A method of designing a utility pipe trench for water management comprising:
- sizing a utility pipe to be placed within a trench;
 - selecting a porous particulate material to place in the trench;
 - 5 selecting a width for the trench wherein the width is no less than an outer diameter of the utility pipe;
 - selecting a length of the trench that will contain the porous particulate material;
 - determining a volume of water to be stored within an area occupied by the porous particulate material;
 - 10 using the width, the length, and the volume of water to determine a minimum depth for the porous particulate material; and
 - selecting a depth for the trench wherein the depth is greater than the minimum depth for the porous particulate material.
- 15 26. The method of claim 25 further comprising taking into account a volume occupied by the utility pipe in the porous particulate material when determining the minimum depth for the porous particulate material.
- 20 27. The method of claim 25 wherein a storm water run-off is used to determine the volume of water.
28. The method of claim 25 wherein the porous particulate material selected is gravel.